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# Health problems and the health care provider choices: A comparative study of urban and rural households in Egypt

Salma B. Galal [a,*], Nageya Al-Gamal [b,†]

[a] *Former WHO Technical Officer, Geneva and Public Health Professor, Egypt*
[b] *Faculty of Medicine [Girls], Al-Azhar Univ., Egypt*

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**Abstract** *Objective:* To assess families' health problems and the health facility choices in an urban and a rural district in Egypt.

*Methods:* A cross-sectional descriptive study with a multi-stage random sample of 948 urban and 401 rural households was undertaken in a district of Cairo and rural Giza. Data was collected through interviews. The questionnaire addressed health problems and the use of health services within the fortnight prior to the survey.

A follow-up of a sub-sample of 285 urban and 114 rural households was carried out 2—3 weeks after the first interview to assess the outcome of complaints. The EPi Info Statistical Package was used for analysis and comparing urban and rural families.

*Results:* Over 60% of urban and 78.8% of rural families had health complaints - respiratory, gastrointestinal and musculoskeletal. Outpatient clinics in public hospitals were the first choice for 49.7% of urban families and 23% of rural, while 25.7% of urban and 42.8% of rural families visited private clinics. Over half of the families with complaints recover from their illnesses within a fortnight.

*Conclusion:* Urban families have less health complaints than rural; however, rural families recover sooner. Families bypass often public primary health care services. Urban families overuse outpatient clinics in public hospitals.


## 1. Introduction

Health is a fundamental human right. In 1950s, access to free health services was considered a constitutional right of every citizen in Egypt. The Health Sector Reform program and the national

* Corresponding author. Address: Public Health, 23, Sh. Abdel Kader Al-Maghrebi, 11361 Heliopolis, Cairo, Egypt. Mobile: +20 1006610196.
*E-mail address:* asra78@gmail.com (S.B. Galal).
† Died.

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initiative Healthy Egyptian 2010 both aim to assure universal access to primary and family health care and to provide the entire population with a basic package of priority services based on needs [1]. Over 90% of Egypt's population has access to the Ministry of Health (MOH) primary health care (PHC) units. In addition, there are seven other health sectors providing services: private sector, non-governmental organizations (NGO), Health Insurance, Curative Organization, universities, Armed Forces and others. In rural areas, aside from the MOH health units or district hospitals, there are private clinics and NGO polyclinics. Urban areas in all governorates have Health Insurance, as well as some university hospitals. Only urban governorates have all health sectors. Public sector facilities are either free of charge or charge minimum fees. Families choose which health facility they want to visit. Over 50% of the population is covered by health insurance.

Only a few studies in Egypt were conducted on families' utilization of services. The Egypt Demographic Health Survey (EDHS) [2] disclosed that for women's health and maternal health care, 19.1% of women used the public health sector and 54.5% the private sector and 26.4% had no care. In addition, health complaints and utilization differ according to seasonal variations and weather conditions [3,4]. The utilization of health services is associated with the availability and accessibility of the facility and the effectiveness and efficiency of the services provided. Women in the EDHS [2] mentioned that they have problems with regards to accessing health care as they are concerned that they would not find any provider or a female provider or the medication. In addition, patients' satisfaction is related to the person's characteristics, the vicinity of the facility, health system conditions and the quality of services. Differences can exist in health needs as well as in the effectiveness and the quality of care given by different health units, e.g. urban versus rural settings [5]. This study raises the questions: Which health problems or complaints do families in an urban and a rural area have? Which health care facilities do they use? Do they make use of public primary health care facilities?

The objectives of this study are:

- To assess families' health problems in an urban and a rural district in Egypt during a two-week period;
- To assess families' health facility preferences.

## 2. Methods

### 2.1. Study area

A district was chosen randomly from Egypt's Cairo and Giza governorates representing an urban and a rural area. One district out of 29 districts of Cairo was chosen. The district has two university hospitals, one Health Insurance hospital, 11 private hospitals, 12 MOH health units, 181 private clinics and 104 pharmacies. In the rural district of Giza, 9 out of the 28 villages were chosen randomly. The rural area has one MOH district hospital, 21 MOH health units, 40 private clinics and 15 pharmacies.

### 2.2. Design

A cross-sectional descriptive study with a multistage random sample of 948 urban and 401 rural households was undertaken during the winter. In addition, a follow-up and re-interview of a subsample of 285 urban and 114 rural households were carried out 2—3 weeks after the first interview to assess the outcome, to determine whether they changed the services if their complaints persisted and the reasons for the change.

### 2.3. Sampling

The catchment area of one of the university hospitals in the Cairo district was chosen. From the hospital, a street was chosen from each cardinal direction to interview 1000 households representing at least 3% of the households in the area. Out of 1253 households visited, only those with children under 18 years were eligible and therefore interviewed. A total of 450 rural households were interviewed in the nine villages. Approximately 20 to 80 households were interviewed per village representing 3% of the households. Public health physicians (20) were trained and carried out the surveys.

### 2.4. Tools

Of the total number of questionnaires carried out, only 948 urban and 401 rural households were included in the study as either nobody was at home at the time of the survey or some questionnaires were incomplete. Either male or female head of households were interviewed depending on who was present at the time of the survey. Apart from demographic characteristics, the questionnaire comprised subjective health complaints, choice of health services within the fortnight prior to

the survey and referral. An inquiry was also conducted upon their satisfaction with the provided services and their suggestions to improve health services. The questionnaire was pre-tested in a pilot study on 18 households and the required modifications were done. The follow-up questionnaire assessed the outcome of the health complaint and the visit to other health services.

### 2.5. Data analysis

Data was computerized and analyzed using an EPi Info Statistical Package. Urban families were compared with rural families. Chi-square and T-test were used. A 5% level of significance was taken.

#### 2.5.1. Ethical consideration

The Academy of Scientific Research and Technology approved the study. All subjects entered the study with their oral informed consent.

## 3. Results

The percentage of respondents without a formal education was less in the urban (29.4%) than the rural (55.7%) area. Tertiary education accounted for 29.0% in urban respondents compared with 17.0% in rural areas. Over 91% of men was employed. The percentage of employed women was greater in the urban (47.2%) than in the rural area (44.1%). The average ages of male and female head of household were significantly higher for urban (47.1 ± 12.4 years and 39.4 ± 11.1 years, respectively) than for rural residents (43.8 ± 12.1 years and 37.0 ± 11.5 years, respectively). The average family size was significantly ($p < 0.05$) lower in the urban (4.85 ± 1.6) than in the rural (5.07 ± 1.9) area (Table 1). The result trend is in accordance with that of El-Zanaty and Way [2]; however, they differ in the percentages most likely as they are from one urban and rural area only.

### 3.1. Health complaints

Over 60% of urban and 78.8% of rural families had complaints within the fortnight before the survey ($p < 0.05$). Respiratory, gastrointestinal and musculoskeletal were the most common ailments in both urban and rural families. Respiratory (21% urban; 38% rural) and gastrointestinal (12% urban; 16%

**Table 1** Socio-demographic characteristics of respondents in households.

| Households' characteristics | Urban N = 948 % | Rural N = 401 % | *P* value |
|---|---|---|---|
| *Interviewee* | | | |
| Male head of household | 42.0 | 62.1 | <0.05 |
| Female head of household | 58.0 | 37.9 | |
| *Marital status* | | | |
| Married | 86.2 | 89.9 | >0.05 |
| Divorced/Widowed | 13.8 | 10.1 | |
| Education | | | |
| No formal education | 29.4 | 55.7 | <0.05 |
| Primary | 19.7 | 9.2 | |
| Secondary | 21.9 | 18.1 | |
| Tertiary | 29.0 | 17.0 | |
| Occupation | (*N* = 398) % | (*N* = 249) % | |
| Male: Employed | 95.7 | 91.0 | |
| Unemployed | 4.3 | 9.0 | |
| | (*N* = 550) | (*N* = 152) | |
| Female: Employed | 47.2 | 44.1 | |
| Housewife | 42.5 | 48.1 | |
| Unemployed | 10.3 | 7.8 | |
| | Mean ± SD | Mean ± SD | |
| Husband age (range 18—80 years) | 47.1 ± 12.4 | 43.8 ± 12.1 | <0.05 |
| Wife age (range 18—66 years) | 39.4 ± 11.1 | 37.0 ± 11.5 | <0.05 |
| Family size (range 2—13) | 4.85 ± 1.67 | 5.07 ± 1.89 | <0.05 |

**Table 2** Health complaints within fortnight in rural and urban district.

| Ailments/diseases | Urban (*N* = 948) % | Rural (*N* = 401) % |
|---|---|---|
| Respiratory tract | 21.1 | 38.1 |
| Gastrointestinal | 12.0 | 16.2 |
| Musculoskeletal | 7.5 | 5.1 |
| Cardio-vascular | 3.4 | 2.2 |
| Urinary tract | 2.2 | 2.7 |
| Ear-Nose-Throat (ENT) | 3.3 | 5.5 |
| Eye | 1.8 | 5.0 |
| Accident | 2.1 | 0.2 |
| Fever | 5.7 | 3.0 |
| Others | 1.1 | 0.7 |
| Had no complaints | 39.7 | 21.2 |

Chi-square = 95.5, df = 10, $p = 0.00$.

rural) ailments were found more in rural than in urban families. The percentage of musculoskeletal complaints was 7.5% in urban and 5% in rural families (Table 2).

## 3.2. Use of health services

More than 92% of urban and 79% of rural persons with complaints visited health services within the fortnight prior to the survey, while 4% of urban and 6.4% of rural persons did not. Outpatient clinics of public hospitals were the first choice for 49% of urban family members. Households accessed more private clinics in rural (42.8%) areas. Similarly, Ward [8] found in another part of Egypt that public hospitals and private clinics were more visited by patients. Urban and rural families used public primary health care (PHC) units/centers to 8.7% and 9.3% respectively; 3.5% of urban and 14.7% of rural families bypassed health services and went directly to pharmacies. Few families go to traditional healers for their ailments. However, according to EDHS [2], the traditional birth attendant delivers 19.7% of pregnant women in Egypt, and 8.3% of urban and 3.5% of rural households used non-governmental polyclinics (Table 3). No one mentioned referrals to a service.

Family members accessed pharmacies for respiratory complaints (51.4%) and fever (14.3%), governmental and private PHC services for musculoskeletal ailments (21.8% and 20.3%, respectively), private clinics for gastrointestinal (19%) and cardiovascular problems (11.5%), and hospitals for urinary tract complaints (7.7%) (Table 4).

Almost one-third denoted that the proximity to their home and — another third - the good quality of services were the most important factors governing their choice of health services in both urban and rural districts. EDHS [2] indicated that the proximity is important for women of the two lowest wealth quintiles and for those without or with primary education. The availability, vicinity and

**Table 3** Health provider visited within fortnight and reasons for choice.

| Choice of health provider | Urban N = 572 % | Rural N = 313 % | Chi-square *P* value |
|---|---|---|---|
| *Public* | | | |
| Outpatients' clinics of hospital | 49.7 | 23.3 | Chi-square = 97.1 |
| Primary Health Center/MCH | 8.7 | 9.3 | df = 5 |
| *Private* | | | |
| Clinic | 25.7 | 42.8 | $p = 0.00$ |
| Polyclinic (NGO) | 8.4 | 3.5 | |
| Pharmacy | 3.5 | 14.7 | |
| Did not visit any* | 4.0 | 6.4 | |
| **Reasons for choice** | N = 529 % | N = 247 % | |
| Good quality service | 35.5 | 30.4 | Chi-square = 13.9 |
| Near their home | 32.7 | 32.9 | df = 5 |
| Know health care providers | 11.9 | 21.6 | $p = 0.02$ |
| Free services | 13.9 | 18.5 | |
| Suitable working hours | 4.6 | 5.9 | |
| Others | 1.3 | 0.7 | |

* 0.3% of urban and 0.4% of rural visited traditional healers.

**Table 4** Health Services visited within fortnight according to health complaints.

| Health services | Public | | | Private | |
|---|---|---|---|---|---|
| | Outpatients' clinics of hospital % | Primary Health Center % | Private clinic % | Private NGO polyclinic % | Pharmacy % |
| **Reason of access** | | | | | |
| Respiratory ailments | 36.3 | 32.1 | 35.2 | 47.5 | 51.4 |
| Gastrointestinal complaints | 15.5 | 11.5 | 19.0 | 6.8 | 8.6 |
| Cardiovascular diseases | 8.2 | 6.4 | 11.5 | 3.4 | 8.6 |
| Musculoskeletal problems | 18.8 | 21.8 | 14.2 | 20.3 | 11.4 |
| Urinary tract | 7.7 | 2.6 | 3.6 | 3.4 | 5.7 |
| Fever | 7.0 | 11.5 | 8.7 | 6.8 | 14.3 |
| Others | 6.5 | 14.1 | 7.8 | 11.8 | 0.1 |

Chi-square = 39.2 df = 24 $p = 0.03$.

**Table 5** Satisfaction of families with health services and reasons for dissatisfaction.

| Satisfaction with health services | Urban $N = 571$ % | Rural $N = 316$ % | |
|---|---|---|---|
| Satisfied | 83.2 | 92.8 | Chi-square = 17.8 |
| Dissatisfied | 16.8 | 7.3 | $P = 0.00$ |
| **Reasons for dissatisfaction**[a] | $N = 96$ % | $N = 23$ % | |
| Maltreatment by providers | 60.5 | 35.0 | Chi-square = 4.9 $P = 0.03$ |
| Distance | 14.5 | 26.1 | Chi-square = 1.7 $P = 0.19$ |
| Long waiting times | 22.9 | 47.8 | Chi-square = 5.7 $P = 0.02$ |
| Over crowding | 33.3 | 47.8 | Chi-square = 1.4 $P = 0.23$ |
| Disorganized work | 26.0 | 26.1 | Chi-square = 0.0 $P = 0.99$ |
| Unsuitable working hours | 7.3 | 21.7 | Chi-square = 4.3 $P = 0.04$ |
| High cost | 11.5 | 13.0 | Chi-square = 0.4 $P = 0.83$ |

[a] More than one answer.

quality of services are important; 42.8% of rural families choose private clinics. Free services and knowing the health care providers were significant factors for rural families in selecting health services (21.6% and 11.9%, respectively) (Table 3).

## 3.3. Satisfaction with health services

The majority of urban (83%) and rural (92.8%) respondents were satisfied with the health services they accessed. Ill- treatment by care providers was the main reason for dissatisfaction with health services in urban households (60.6%); while long waiting times and unsuitable working hours were significant causes for dissatisfaction in rural areas (47.8% and 23.8%, respectively) (Table 5).

## 3.4. Follow-up of a subsample on the persistence of complaints

More than half (54.1%) of urban and about two thirds (63.3%) of rural subjects had recovered. Eye diseases were the most prevalent persistent complaints (40.0% urban and 44.4% rural), followed by gastrointestinal and respiratory diseases in urban households (37.7% and 35.9%, respectively) and ENT and respiratory diseases in rural areas (27.8% and 27%, respectively). Less than a fifth (19%) of urban and a fourth (22.7%) of rural subjects had changed the services when their complaints persisted. The main reasons for changing health services were bad treatment by care providers and distance to facilities in both areas (see Table 6).

**Table 6** Follow-up of a subsample for disease progress.

| Items | Urban N = 285 % | Rural N = 114 % | Significance test *p* |
|---|---|---|---|
| *Disease progress* | | | |
| Recovered | 54.1 | 63.2 | Chi-square = 2.76 |
| Persist | 45.9 | 36.8 | *p* = 0.09 |
| **Persistent complaints**[a]**:** | *N* = 131 % | *N* = 42 % | |
| Respiratory diseases | 35.9 | 27.0 | Chi-square = 2.7 *p* = 0.1 |
| Gastrointestinal diseases | 37.5 | 17.6 | Chi-square = 15 *p* = 0.00 |
| Fever | 15.8 | 14.3 | |
| ENT diseases | 12.6 | 27.2 | Chi-square = 12.4 *p* = 0.00 |
| Eye diseases | 40.0 | 44.7 | |
| **Switch to Another Services** | | | |
| Yes | 19.0 | 22.7 | Chi-square = 0.76 |
| No | 81.0 | 77.3 | *p* = 0.38 |

[a] More than one disease complaint.

## 4. Discussion

The health status of families varies, and can differ within a fortnight or a month. Health complaints differ according to season [3]. In the present study in winter, 60% of urban and 78% of rural family members had health complaints and more urban than rural families visited health services within the fortnight prior to the survey. Use of health services does not only reflect health status, but also health needs [6]. The findings of this study show that the prevalence of complaints was less in urban than in rural households. People living in urban areas are advantaged in many ways compared with those in rural areas [7]. In Egypt, despite the universal coverage of primary health services, discrepancies in health between different regions — including urban and rural area — are evident [2]. In this study, over half of urban and around two thirds of rural families recovered from their health complaints two to three weeks later.

### 4.1. Choice of health services

Outpatient clinics in public hospitals were the first choice for urban families (49.7%) and the second choice for rural families (23.3%); due to the distance to the district hospital, rural families will generally visit them if they do not find relief from the health care facilities in their vicinity. Urban families' excessive use of outpatient clinics in public hospitals is supported by Ward's [8] research on health care in Egypt. Urban households use less private clinics (25.8%) than rural households (42.8%). Rural families' choice of health services is limited to the health facilities available — Ministry of Health PHC units, private clinics and sometimes NGO polyclinics. Less than 10% of urban and rural households uses PHC units.

### 4.2. Factors influencing facility choice

It was reported that the quality of public health care, particularly at the peripheral level, is generally low, contributing to a very low level of utilization of the extensive network of primary health facilities in Egypt [9]. There were limited alternative health care options in rural areas. Poor access to specialized care in rural communities has been documented in other studies [10,11]. Even in the world's wealthiest and healthiest countries, some patients experience difficulties accessing specialists [12]. Issues related to health care access, in terms of cost and distance, and the quality of services pose the most challenges. In regards to medical cost, 13.9% of urban and 18.5% of rural subjects choose unpaid services. The increased use of pharmacies observed in rural areas could imply that local health services were bypassed in order to spend less. This study revealed the importance of different factors with quality exerting the greatest influence on the decision of urban residents to choose the service (35.5%); while vicinity of the clinic was the leading reason that

governs the use of health services in rural areas (32.9%). Rankin et al. [10] equally concluded that the choice of service is determined mainly by the quality and ability to access the clinic. Kelaher et al. [11] also found that those living in rural areas were more affected by geographic disadvantages and more likely to suffer greater problems concerning access to health facilities. In a study carried out in Egypt, Yount [13] noticed that the presence of a public clinic in the neighborhood increases the likelihood of accessing care. Kmietowicz [14] further demonstrates a greater concern on the part of health service clients with regards to the quality of care provided. The World Health Report 2000 denotes that effective access to a health care system is limited by high out-of-pocket costs which place a particular burden on low-income groups [15]. Families' out-of-pocket expenditure on health is 60% [9]. Therefore, minimizing financial barriers is likely to improve the utilization of services and impact health status [16]. However, problems of affordability are widespread, and the cost of delivering health care imposes a large burden in nearly all countries. Increasingly, health care decision makers are being asked to improve performance by containing expenditures while maintaining steady improvement in access and quality [17].

### 4.3. Patients' satisfaction

Patient satisfaction is widely considered as an important indicator in the efficient utilization of health services as it assesses the extent to which these services meet a person's requirements and needs [18]. In the present study, the overall satisfaction was significantly higher among rural residents (83.2% for urban versus 92.8% rural), despite the previously mentioned services' limitations specific to rural areas. It was assumed that the idea of 'good' and 'bad' differs in various cultural and socio-economic groups. Gadalla et al. [19] recorded a 98% satisfaction rate. However, it seems likely that patients' views of health care delivery and how they want to be treated are much more consistent among different populations [20].

''Humaneness'' in care is dominant in patients' views of what greatly influences their satisfaction. Proper acknowledgment of patients, thoroughness of care and attentiveness of providers are important features of a good patient-doctor/nurse relationship and determinant of patient satisfaction [21]. This study determined that health providers' behavior and maltreatment were the principal reasons for dissatisfaction among discontent urban subjects (60.6%) and 36.0% of rural subjects. Likewise, Saeed et al. [22] found that providers' behavior toward patients, particularly respect and politeness, was the most powerful factor in satisfaction with services.

A consistent finding among different studies found that the longer the wait for health care, the less satisfaction there will be [19]. In the current study, long waiting times were found to be an important cause for dissatisfaction, particularly among rural subjects (23.1% urban versus 47.8% rural). Similarly, Kelaher et al. [11] reported that long waiting time of outpatients was a major issue for rural subjects.

Notably, it was also evident that patient satisfaction was influenced by the pattern of service delivery. Unsuitable working hours, improper organization and overcrowding, which largely reflect limitations in services, were significant causes of dissatisfaction in both urban and rural areas.

### 4.4. Switching facilities

Factors that determined patient satisfaction were in accord with those ascribed for changing health services, with providers' behavior also exerting greater influence in rural areas, while physical inaccessibility was important for both urban and rural areas. Around 20% switched facilities. This finding implies that dissatisfied clients are more likely to forego the service and seek medical care elsewhere. In agreement with Mugisha et al. [23], it was found that previous access to care had the greatest impact on a patient's decision to switch providers. It was postulated that utilization of health services encompasses two phases: initiation of the patient to seek treatment in a particular system, and retention by that system should the illness require further treatment and follow-up in the case of future illness.

### 4.5. Patients' choice matrix

In the present study, it seems likely that families use services according to the perceived seriousness of disease. Pharmacies were used for minor respiratory complaints; while private clinics were favored for gastrointestinal and cardiovascular ailments. Likewise, Kelaher et al. [11] found that most patients tend to frequent the few 'free' services when they wanted to get prescriptions for uncomplicated manifestations, but not when they believed that they or their families had serious health problems. Rankin et al. [10] also noticed that local services were used for basic and emer-

gency care, while regional or metropolitan centers were preferred in the event of major or severe illness. Mugisha et al. [24] stated that the type of illness is a significant determinant in the choice of care people perceived competent.

## 5. Conclusion

Respiratory, gastrointestinal and musculoskeletal were the most common health problems in both urban and rural families. Urban families have less health complaints than rural; however, rural families recover more rapidly. There is no referral system. Families bypass the PHC units of the MOH in both areas. It seems that families have a 'matrix' for their choice of health services according to the perceived seriousness of the health problem. Pharmacies are more often used by rural families, likely bypassing other health facilities in order to save money. Urban families overburden outpatient clinics of public hospitals. Since rural families have fewer choices of health facilities, they prefer to use private clinics.

It is recommended that future studies concentrate on a specific health problem and monitor affected families for a longer period of time to include documentation of their recovery. In addition, both urban and rural districts need a referral system to connect primary health units and/or family practices with the different health sectors in Egypt. A computerized database for patients is needed to monitor the health conditions of families and to avoid the overuse of hospitals.

## Conflict of interest

None declared.

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